

CONTENTS

Section I

THE RELATIONSHIPS OF MICROORGANISMS TO EACH OTHER AND TO THE LIVING WORLD

| | |
|--|----|
| 1 INTRODUCTION | 3 |
| 2 PROTOZOA, ALGAE AND BACTERIA | 21 |
| 3 THE HIGHER FUNGI: MOLDS AND YEASTS | 34 |
| 4 THE HIGHER FUNGI: MOLDS AND YEASTS (Continued) | 43 |
| 5 THE VIRUSES | 61 |
| 6 THE VIRUSES: BACTERIOPHAGE | 72 |
| 7 THE RICKETTSIAE | 79 |
| 8 THE PLEUROPNEUMONIA-LIKE ORGANISMS | 81 |

Section II

METHODS AND PHENOMENA OF MICROBIOLOGY

| | |
|--|-----|
| 9 OPTICAL METHODS IN MICROBIOLOGY | 89 |
| 10 MORPHOLOGY AND STRUCTURE OF BACTERIA | 108 |
| 11 CLASSIFICATION OF BACTERIA | 127 |
| 12 EFFECT OF CHEMICAL AND PHYSICAL AGENTS ON MICROORGANISMS | 138 |
| 13 THE CULTIVATION OF MICROORGANISMS | 164 |
| 14 THE GROWTH OF MICROORGANISMS | 179 |
| 15 VARIATION OF MICROORGANISMS | 188 |
| 16 THE SYSTEMATIC STUDY OF BACTERIA | 200 |
| 17 DESTRUCTION, REMOVAL AND INHIBITION OF MICROORGANISMS: | |
| 1. Basic Principles | 214 |
| 18 DESTRUCTION, REMOVAL AND INHIBITION OF MICROORGANISMS: | |
| 2. Practical Applications | 235 |
| 19 DESTRUCTION, REMOVAL AND INHIBITION OF MICROORGANISMS: | |
| 3. Antibiotics | 250 |
| 20 ENZYMES AND MICROBIOLOGY | 266 |
| 21 THE METABOLISM OF MICROORGANISMS: 1. Digestion and Assimilation | 276 |
| 22 THE METABOLISM OF MICROORGANISMS: 2. Dissimilation | 288 |

Section III

IMMUNOLOGY. THE BODY'S RESISTANCE TO MICROORGANISMS

| | |
|--|-----|
| 23 IMMUNOLOGY AND MICROBIOLOGY: 1. Principles and Methods of Study | 305 |
| 24 IMMUNOLOGY AND MICROBIOLOGY: 2 Artificial Immunity | 327 |
| 25 IMMUNOLOGY AND MICROBIOLOGY: 3. The Tissues in Relation To Immunity | 339 |
| 26 MICROORGANISMS AND DISEASE | 345 |

| | |
|--|-----|
| 27 TRANSMISSION OF DISEASE | 353 |
| Section IV | |
| THE BACTERIA (CLASS SCHIZOMYCETES) | |
| 28 THE "SLIME BACTERIA" (ORDER MYXOBACTERIALES) | 367 |
| 29 THE "SHEATHED BACTERIA" AND "STALK-FORMING BACTERIA" | 372 |
| 30 THE SULFUR BACTERIA | 380 |
| 31 THE PHOTOSYNTHETIC BACTERIA | 386 |
| 32 THE MOLD-LIKE BACTERIA (ORDER ACTINOMYCETALES) | 390 |
| 33 THE SPIRAL, FLEXIBLE BACTERIA (ORDER SPIROCHAETALES) | 402 |
| 34 THE AEROBIC SPORE-FORMING RODS (GENUS BACILLUS) | 412 |
| 35 ANAEROBIOSIS, THE GENUS CLOSTRIDIUM | 419 |
| 36 THE FAMILY CORYNEBACTERIACEAE | 431 |
| 37 SPHERICAL BACTERIA | 441 |
| 38 THE SPIRAL, RIGID BACTERIA | 461 |
| Section V | |
| THE MICROBIOLOGY OF SPECIAL ENVIRONMENTS | |
| 39 THE MICROBIOLOGY OF WATER | 469 |
| 40 SOME PATHOGENIC GRAM-NEGATIVE RODS: ENTEROBACTERIACEAE AND PARVOBACTERIACEAE | 491 |
| 41 THE MICROBIOLOGY OF THE SOIL | 504 |
| 42 THE MICROBIOLOGY OF AIR | 517 |
| 43 THE MICROBIOLOGY OF MILK | 525 |
| 44 THE MICROBIOLOGY OF FOODS | 538 |
| 45 MICROBIOLOGY AND INDUSTRY | 560 |
| 46 SOME VIRAL DISEASES | 582 |
| 47 SOME RICKETTSIAL DISEASES | 592 |
| 48 SOME PROTOZOAL DISEASES | 597 |
| INDEX | 609 |